

Research and development in Iceland 2009



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Investment in Research and Development in 2007

Research and development (R&D) expenditure in Iceland as a share of Gross Domestic Product (GDP) is relatively high compared to other countries. This share was almost 2,7% in 2007. The R&D expenditure was about 35,1 billion ISK that year. Iceland ranks 6th of the OECD countries on this indicator. The business sector accounts for about 55% of R&D expenditure whereas the public sector, including higher education institutions, accounts for about 43%. Of the business sector R&D activities, the public sector only finances 5% which could be considered too low, even though it has been increasing in recent years. At the same time, evidence shows that companies finance over 10% of R&D expenditure within the public and higher education sectors. The public contribution to R&D in Iceland is prominent or about 1,2% of GDP.

Highlights

- In 2007, R&D expenditure in Iceland amounted to 35 billion ISK (ca. 335 MEUR). As a share of the Gross Domestic Product (GDP), R&D expenditure accounted for 2,7%.
- From 2005 to 2007, total R&D expenditure in fixed amounts increased by 5 billion ISK (ca. 60 MEUR) or by 17%. R&D expenditure, as a share of the GDP, decreased by 1 percentage point whilst the GDP increased by 27% from 2005.
- Of all sectors, R&D expenditure was highest (32%) in the health sector in 2007, amounting to 11,4 billion ISK (ca. 136 MEUR). In comparison, 3,4 billion ISK (ca. 36 MEUR) was spent on R&D in the fisheries and agriculture sector (8%).
- The R&D expenditure of health related companies accounts for about 78% of the total R&D expenditure in the field of health research. Around 52% of the total R&D expenditure of companies comes from health related R&D companies.

- Iceland ranks 6th among OECD countries for the R&D/GDP ratio. Sweden, Finland, Japan, Korea and Switzerland are the countries ranked above Iceland.
- The private sector spent about 19 billion ISK (ca. 217 MEUR) on R&D in 2007. This constitutes about 54,6% of Iceland's gross expenditure on R&D (GERD).
- In 2007, approximately 50% of the total expenditure on R&D was financed by the private sector, 38% by the government and 10% of the funding came from abroad.
- In 2007, Sweden had a lower level of R&D expenditure per capita (i.e. 86 thousand ISK or ca. 1 thousand EUR) than Iceland (112 thousand ISK or ca. 1,3 thousand EUR), whilst Iceland also had higher levels than Norway (55 thousand ISK or ca. 660 EUR).
- About three thousand FTE's were performed in R&D in Iceland in 2007. Almost half of the country's FTEs (49,7%) were performed within the private sector.

RANNIS – The Icelandic Centre for Research

Rannís - The Icelandic Centre for Research was established by an Act from 2003 and replaced the earlier Icelandic Research Council established in 1994. This in turn replaced earlier councils that traced their origins to a research council structure set up before the Second World War. The Icelandic Research Council was abolished by the 2003 legislation and the Science and Technology Policy Council was established. The Council has 14 members representing the science and technology community and the social partners. In addition, five ministers sit in the council which is chaired by the Prime Minister.

Rannís reports to the Ministry of Education, Science and Culture and its mission is to provide professional assistance to the preparation and implementation of the science and technology policy in Iceland.

The main functions of **Rannís** are the following:

- Rannís operates the public competitive financial support system for research and technological development. This includes the Icelandic Research Fund, the Equipment Fund and the Icelandic Research Fund for Graduate Students under the Ministry of Education, and the Technology Development Fund under the Ministry of Industry.
- Rannís actively provides the Science and Technology Policy Council and its sub-committees with information on national and international scientific research and technology development in order to provide basis for the policy making process.
- Rannís coordinates and promotes Icelandic participation in various international research and development activities and interacts with corresponding agencies and research councils in other countries. Rannís is the NCP-host organisation for the European Union's 7th Framework Programme.

- Rannís monitors R&D activities and resource allocation in Iceland, evaluates the results of scientific research, technical development and innovation and participates in international benchmarking of the results.
- Rannís promotes public awareness of research and innovation in Iceland.

Rannís serves the Icelandic science community across all fields of science and humanities.

The staff of **Rannís** is a team of 20, including 15 professionals, led by a Director. **Rannís** relies heavily on the involvement of external contacts in its operation. Around 70–80 practicing scientists and technical experts, as well as numerous international contacts, are co-opted to assist in the evaluation of grants applications on a rotating basis.

Research in Iceland

Research, Development and Innovation Statistics for 2007

This booklet provides an abstract of research and development (R&D) statistics in Iceland and is based on an extensive database that has been collected and collated by Rannís and its predecessors (the National Research Council and the Icelandic Research Council) since 1970. Previous booklets can be downloaded from the Rannís website at: www.rannis.is. The collection and processing of the data has been organised in accordance with the procedures of the OECD's Frascati Manual. Furthermore, Rannís actively collaborates with Eurostat and various institutions in the Nordic countries. The Rannís survey of R&D activities in Iceland is conducted every other year. In 2005, data was gathered from 1.200 companies, chosen from the Statistics Iceland database of firms, with more than four employees as well as from public institutions involved in R&D. In addition to the R&D survey, Rannís collects data on R&D from a number of external sources, e.g. commercial companies, public institutions, including institutions of applied industrial research, higher education institutions and private non-profit organisations.

Other Analyses and Statistical Activities

Rannís performs statistical collection and analyses various fields other than R&D. One important area is the collation and processing of data on innovation among Icelandic companies, using information supplied by Statistics Iceland. This forms part of a European Project, CIS (Community Innovation Survey) conducted by Eurostat in collaboration with the OECD. Rannís also processes data in the field of education supplied by Statistics Iceland, the University of Iceland and others. Moreover, Rannís collects data on publications and citations and on patent applications and grants. Rannís currently intends to increase its involvement in the assessment and evaluation of research in various individual areas of science and industry. Researchers from Rannís play an active part in collaborative Nordic and European projects in areas relating to statistics and policy-making in science, technology, innovation and other aspects of the knowledge-based economy.

What is Research, Development and Innovation?

According to the Frascati Manual (2002) R&D is creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. R&D covers three activities: basic research, applied research and experimental development.

Basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.

Applied research is original investigation undertaken to acquire new knowledge, directed primarily at a specific practical aim or objective.

Experimental development is systematic work, drawing on existing knowledge gained from research and practical experience, directed at producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed.

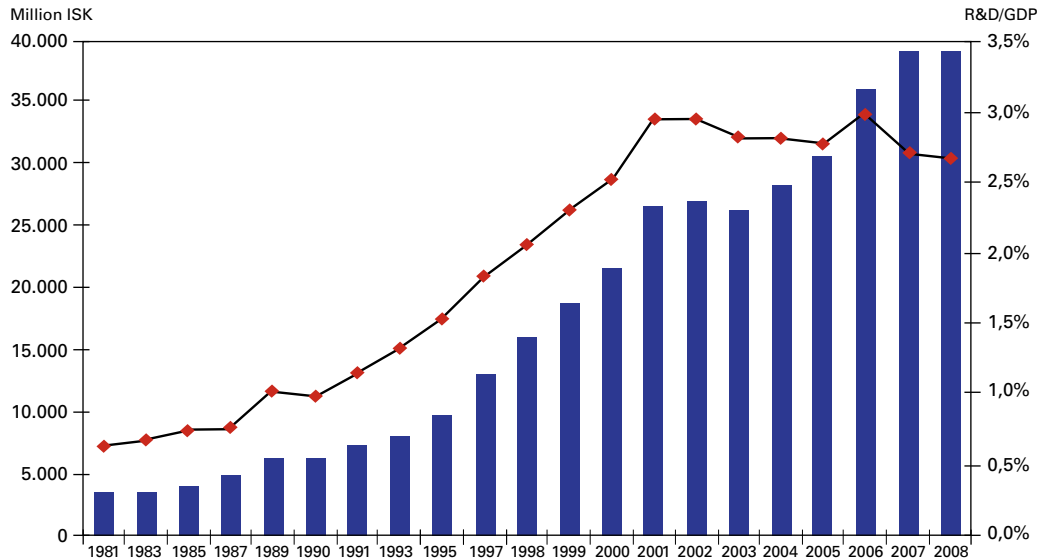
According to OECD's Oslo Manual (2005) innovation is the implementation of a new or significantly improved product (goods or services) or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations. Innovation is always at least new for the firm, but may also be new for the local environment or the world as a whole.

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Figure 1. Total R&D expenditure in fixed prices and R&D expenditure as percentage of Gross Domestic Product (GDP) from 1981 to 2008.



* Statistics for even years are estimates

Source: The Icelandic Centre for Research

Figure 2. Expenditure on R&D by theme in chosen years 1981 to 2007 (%).

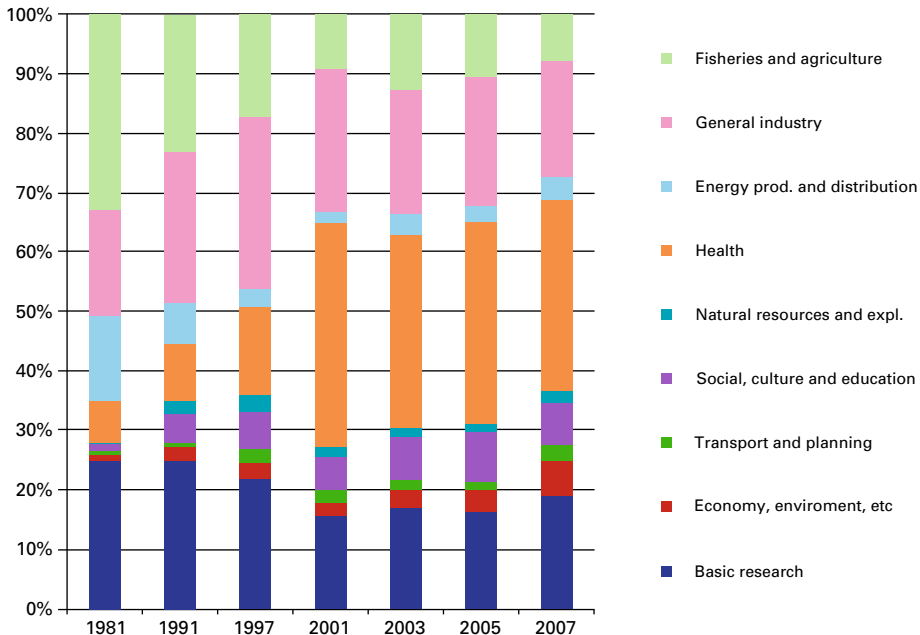


Figure 3. R&D expenditure as a share of GDP in various OECD countries in 2007. Comparison with 2001.

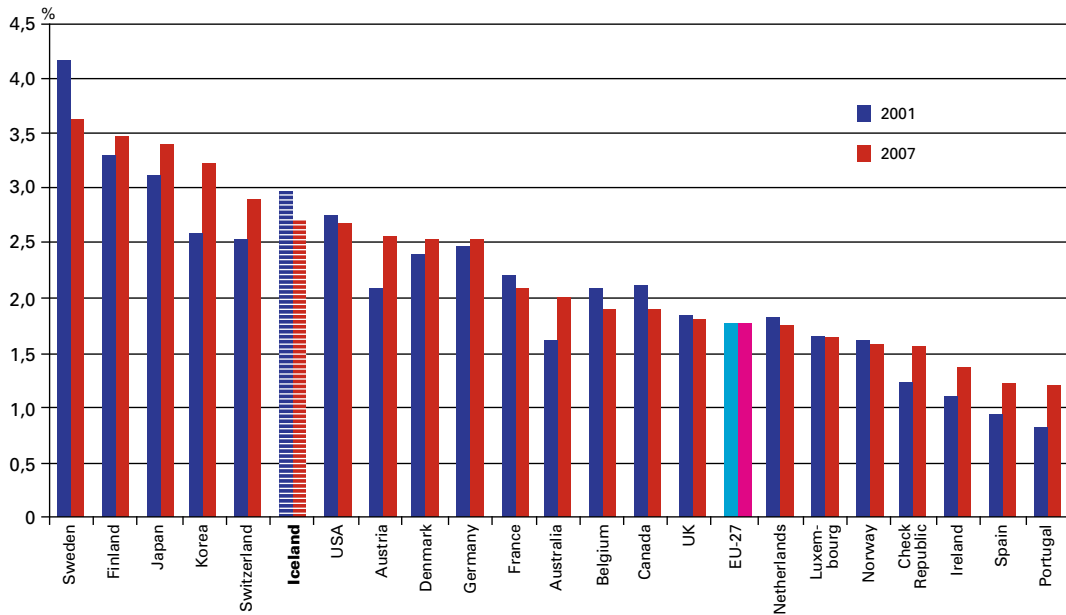
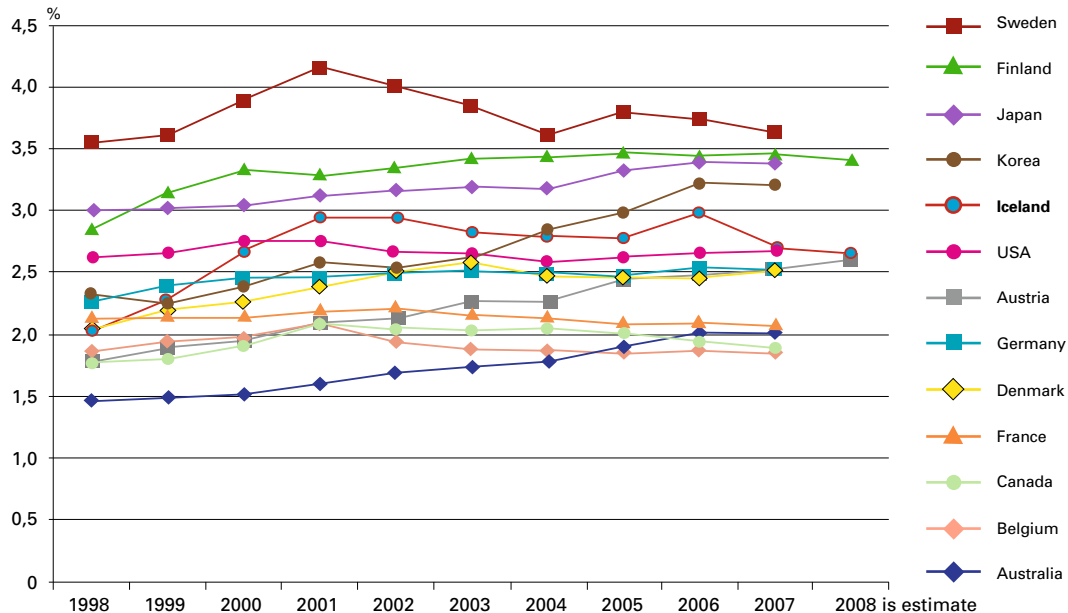


Figure 4. R&D expenditure as a share (%) of GDP in various OECD countries from 1998 to 2008.

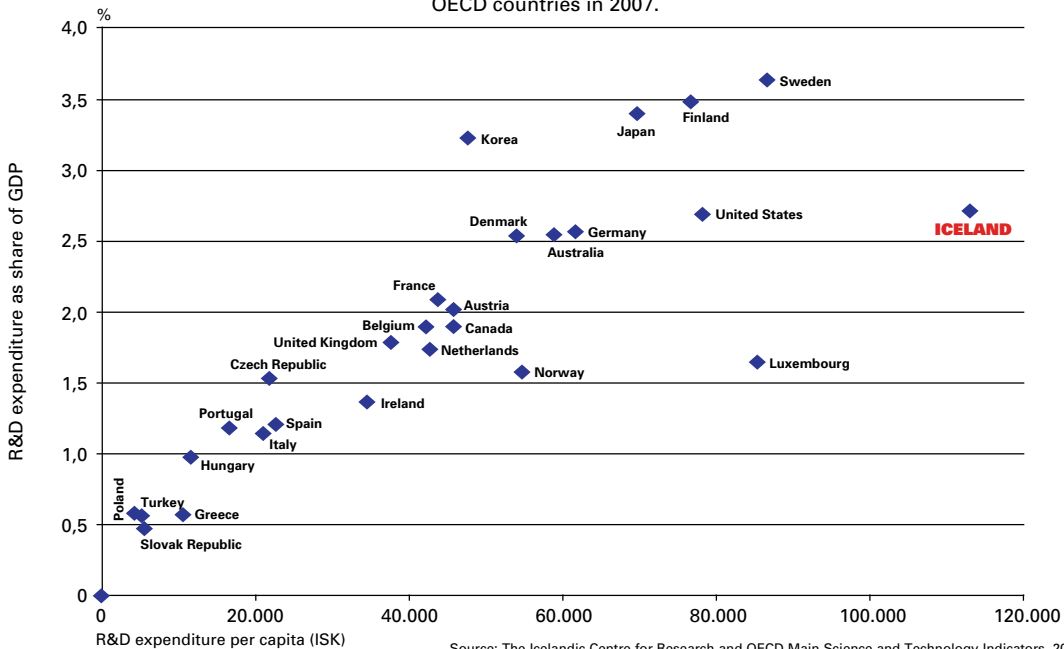


Source: OECD Main Science and Technology Indicators, 2008

Table 1. Total R&D expenditure by source of funds and performing sector in 2007 (MISK).

	PERFORMING ORGANIZATION									
	Business enterprises	%	Private non-profit	%	Public research organisations	%	Higher education	%	Total funding	%
SOURCE OF FUNDING										
Business enterprises	15.956	83,2	1	0,1	518	8,3	1.214	13,7	17.688	50,3
Private non-profit	0	0,0	248	28,6	0	0,0	36	0,4	284	0,8
Public funding	1.037	5,4	291	33,5	5.434	86,8	6.869	77,8	13.631	38,8
From abroad	2.176	11,4	328	37,8	309	4,9	714	8,1	3.528	10,0
Total performed	19.169	100	868	100	6.262	100	8.832	100	35.131	100
Share of total R&D expenditure (%)	54,6		2,5		17,8		25,1		100	

Figure 5. Total R&D expenditure per capita and R&D expenditure as a share of GDP in various OECD countries in 2007.

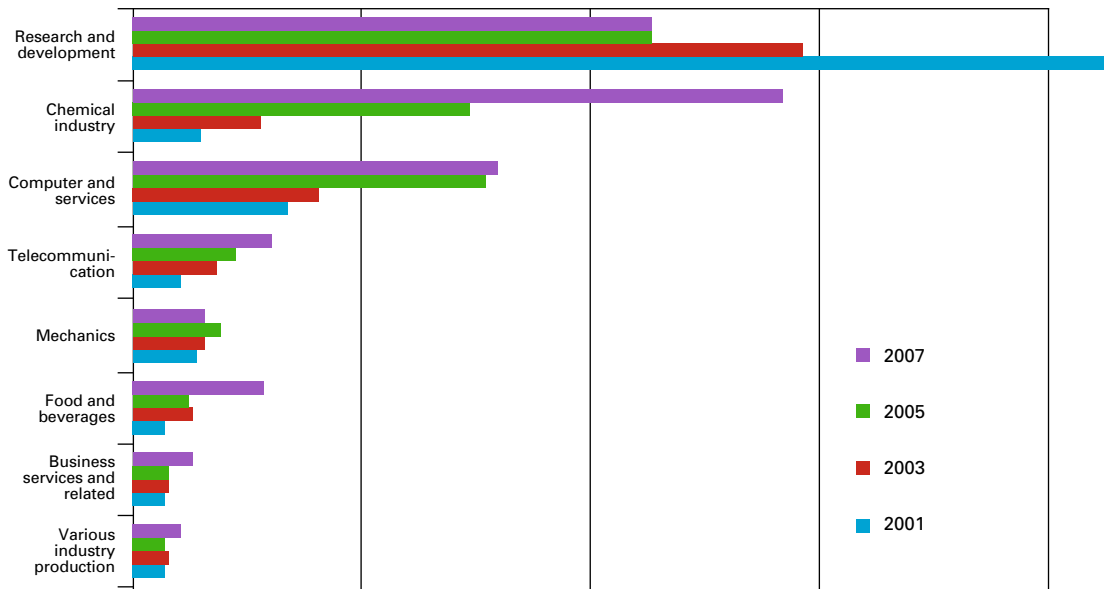


Source: The Icelandic Centre for Research and OECD Main Science and Technology Indicators, 2008

Table 2. Available funds for main competitive funds of Rannis and the AVS supporting mainly R&D.
In million ISK, from 2007 to 2009.

	2007	2008	2009
The Icelandic Research Fund	590	750	815
The Technology Development Fund	500	600	690
The Equipment Fund	110	115	115
The Icelandic Research Fund for Graduate Students	80	90	100
Strategic Research Programmes	105	160	315
Total Rannis funds	1.385	1.715	2.035
Increased Value in Fisheries (AVS)	235	335	335
Total	1.620	2.050	2.370

Figure 6. R&D expenditure by business sector by NACE classification (In thousand ISK) from 2001 to 2007. Fixed prices.



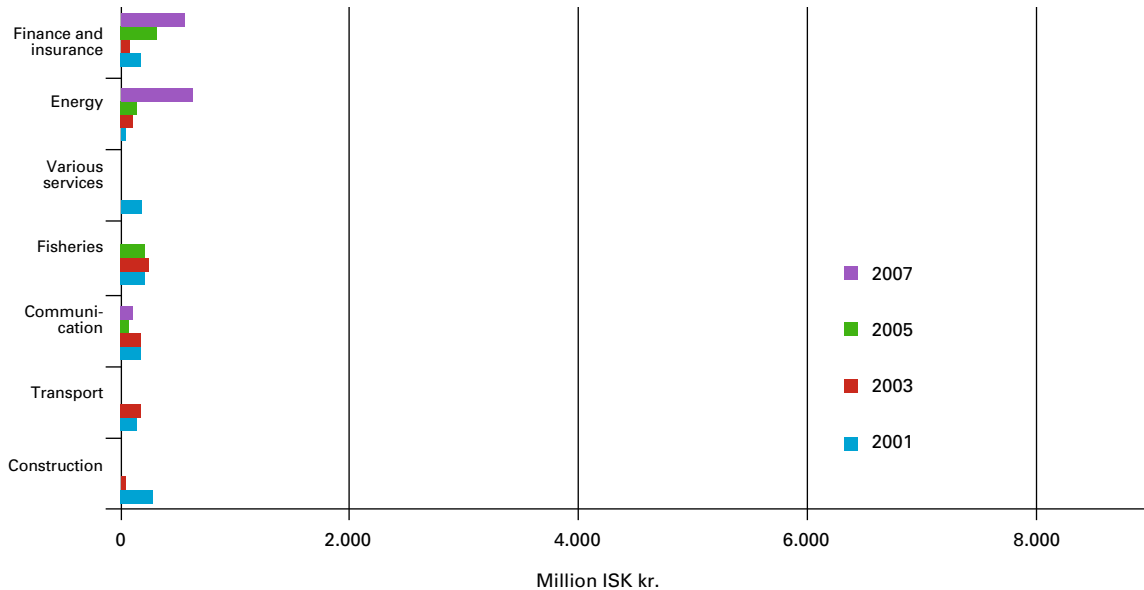


Figure 7. Distribution of grants from the Technology Development Fund by industrial classification. Percentage in 2004 to 2008.

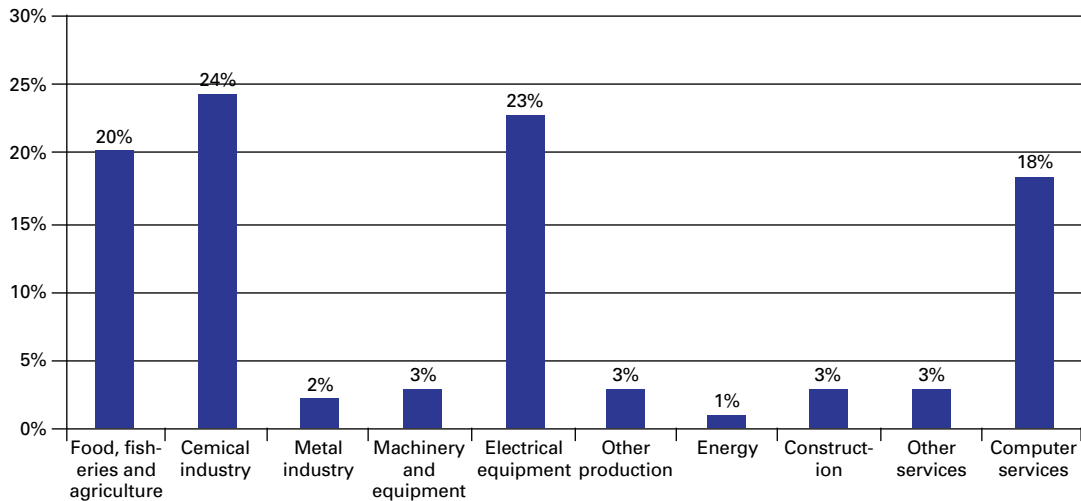


Figure 8. Distribution of grants from the Icelandic Research Fund by fields of science. Other grants than grants of excellence and postdoctoral grants are project grants. From 2008 and 2009.

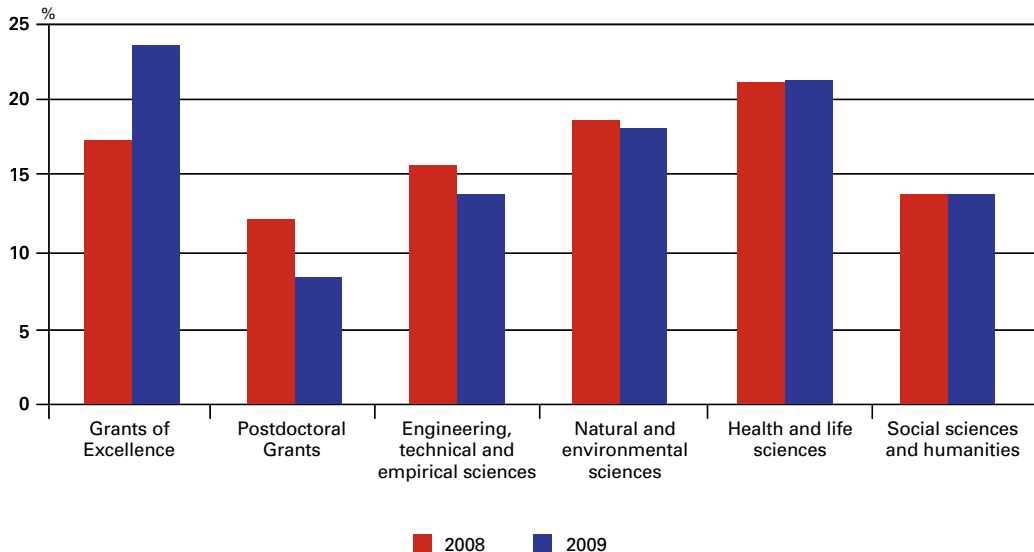


Table 3. R&D personnel full time equivalent (FTE) in the Nordic countries by sector and number of researchers thereof in 2007.

Total FTE	Denmark	%	Finland	%	Iceland	%	Norway	%	Sweden	%
Business enterprises	29.976	65,5	31.940	57,3	1.417	47,5	17.016	50,2	60.750	74,4
Public research organisations	3.361	7,4	7.325	13,1	792	26,6	5.650	16,7	3.372	4,1
Higher education	12.400	27,1	16.503	29,6	773	25,9	11.230	33,1	17.525	21,5
Total	45.737	100	55.768	100	2.982	100	33.896	100	81.647	100

Researchers FTE	Denmark	%	Finland	%	Iceland	%	Norway	%	Sweden	%
Business enterprises	18.149	61,8	22.005	56,9	1.069	49,7	10.790	46,7	27.409	62
Public research organisations	2.231	7,6	4.482	11,6	459	21,4	3.880	16,8	1.974	4,5
Higher education	8.995	30,6	12.153	31,5	621	28,9	8.430	36,5	14.840	33,6
Total	29.375	100	38.640	100	2.148	100	23.100	100	44.223	100

Table 4. R&D personnel full time equivalent (FLE) by sector of performance and occupation in 2007.

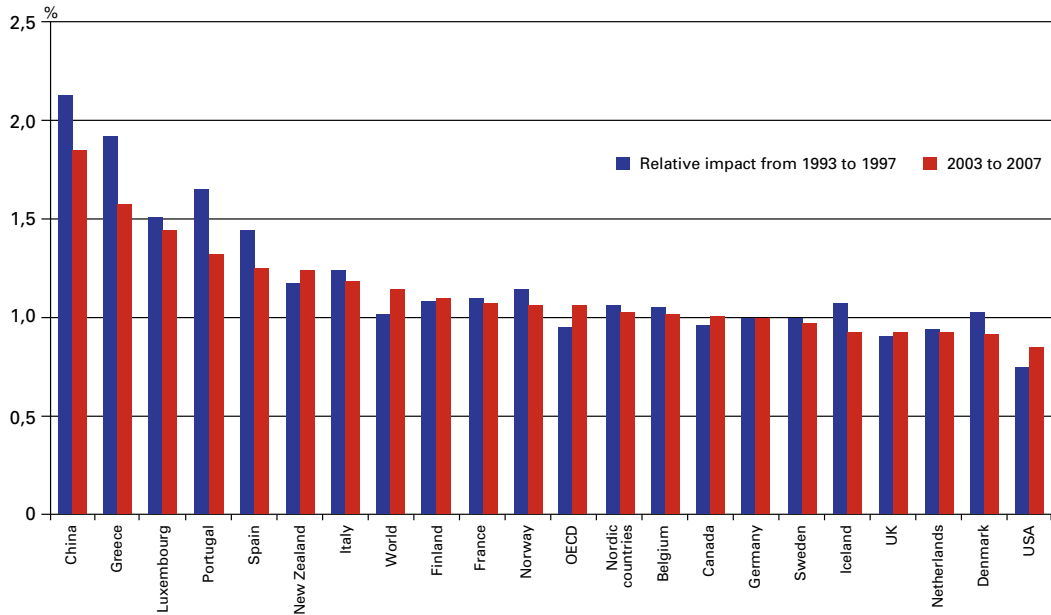
Performing sector	Researchers	%	Technicians	%	Support staff	%	Total	%
Business enterprises	1.068,5	48,4	265,7	51,4	82,7	32,2	1.416,9	47,5
Public research organisation	459,1	20,8	152,7	29,5	89,5	34,8	701,3	23,5
Higher education	620,5	28,1	83,4	16,1	69,2	26,9	773,1	25,9
Private non-profit	60,2	2,7	15,3	3,0	15,6	6,01	91,1	3,1
Total	2.208,3	100	517,1	100	257	100	2.982,4	100
%	74,0		17,3		8,6		100	

Table 5. Number of researchers in the Nordic countries and share of women thereof, in 2003, 2005 and 2007.

Researchers	2003	2005	2007
Denmark	36.046	39.533	44.095
Finland	53.430	51.219	53.273
Iceland	3.517	3.821	3.979
Norway	35.700	37.013	36.998
Sweden	71.592	82.496	–
Total	200.285	214.082	–

Share (%) of female researchers	2003	2005	2007
Denmark	28,1	35,7	–
Finland	29,8	29,0	31,2
Iceland	39,4	39,3	37,8
Norway	29,4	31,7	–
Sweden	–	35,8	–

Figure 9. Relative impact of scientific articles, measured as a share of citations of publications, in a few OECD countries and other larger economies in 1993 to 1997 and 2003 to 2007. Compared to total impact in all OECD countries.



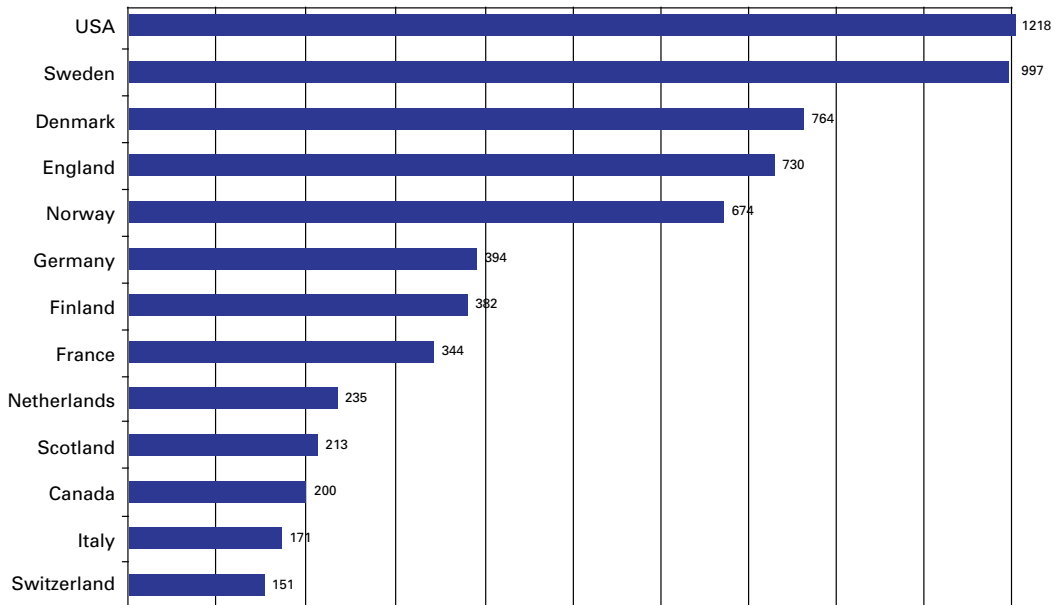
Source: Thomson ISI

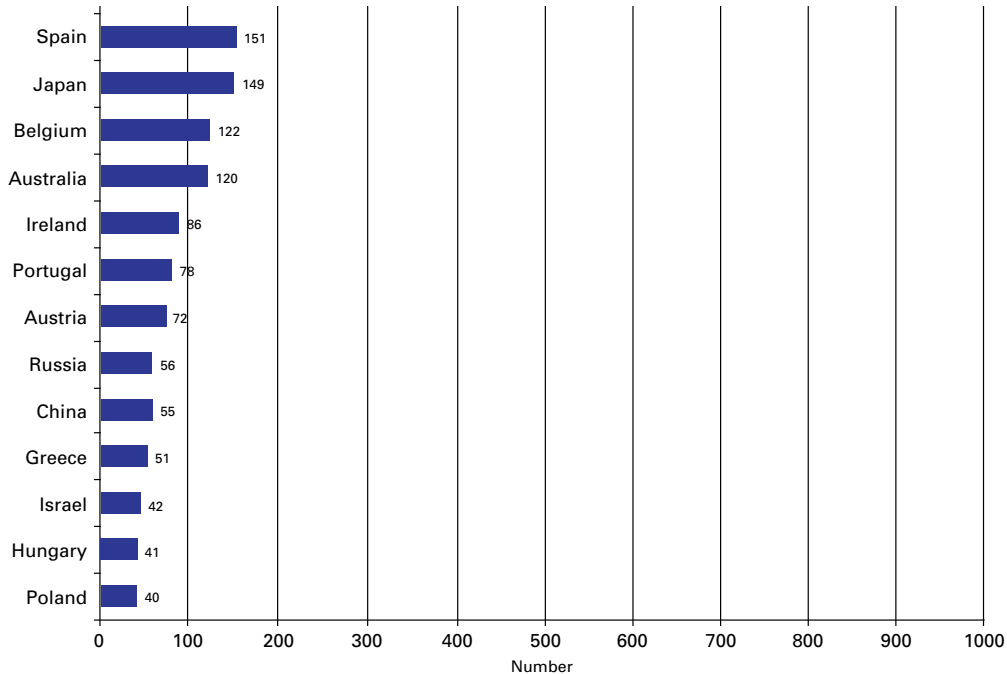
Table 6. Impact of publications by scientists in the OECD countries, measured as citations to their articles. Average of 2003 to 2007 and comparison with total impact of OECD countries.

Social sciences		Humanities		Agriculture and fisheries		Medicine and health		Natural sciences		Engineering and technology		Total	
Switzerland	1,23	Netherlands	1,66	Iceland	1,46	Iceland	1,76	Switzerland	1,31	Switzerland	1,30	Switzerland	1,29
USA	1,20	Hungary	1,55	Switzerland	1,42	Denmark	1,34	USA	1,23	Belgium	1,26	Iceland	1,23
Netherlands	1,13	Norway	1,45	Belgium	1,33	Belgium	1,33	Denmark	1,22	USA	1,23	USA	1,23
Denmark	1,07	Iceland	1,42	UK	1,32	Netherlands	1,30	Netherlands	1,21	Denmark	1,21	Denmark	1,23
Austria	1,02	USA	1,15	USA	1,27	Switzerland	1,29	UK	1,19	Netherlands	1,17	Netherlands	1,22
UK	1,01	Switzerland	1,14	Finland	1,24	Norway	1,29	Sweden	1,13	Canada	1,15	Belgium	1,19
Belgium	1,00	Canada	1,13	Netherlands	1,23	Sweden	1,28	Germany	1,13	UK	1,12	UK	1,15
Germany	0,99	Denmark	1,11	Canada	1,21	Finland	1,26	Ireland	1,10	Finland	1,11	Sweden	1,14
Canada	0,98	Belgium	1,11	Sweden	1,20	USA	1,25	Belgium	1,10	Sweden	1,09	Canada	1,11
Norway	0,95	UK	1,11	Denmark	1,18	Canada	1,18	Canada	1,06	Norway	1,07	Norway	1,10
N-Zealand	0,94	Australia	1,09	Australia	1,16	UK	1,16	Austria	1,04	Germany	1,07	Finland	1,08
Australia	0,93	N-Zealand	1,08	Slovakia	1,15	Portugal	1,14	Australia	1,01	Austria	1,06	Austria	1,06
Iceland	0,92	Austria	1,08	Austria	1,15	Austria	1,10	France	1,00	Australia	1,06	Germany	1,06
Sweden	0,91	Finland	1,06	N-Zealand	1,13	Hungary	1,09	Norway	1,00	Iceland	1,05	Australia	1,03

Finland	0,91	Sweden	1,05	Germany	1,11	Italy	1,08	Iceland	0,99	France	1,04	Ireland	1,00
Italy	0,88	Italy	1,02	Norway	1,10	Australia	1,07	Finland	0,97	Ireland	1,01	France	0,99
Ireland	0,87	Greece	0,94	France	1,09	Czech Republic	1,05	Italy	0,91	Italy	0,98	Italy	0,98
Spain	0,85	Spain	0,93	Italy	1,07	Poland	1,03	N-Zealand	0,91	N-Zealand	0,97	N-Zealand	0,97
France	0,82	Mexico	0,92	Spain	1,01	N-Zealand	1,02	Hungary	0,91	Spain	0,97	Spain	0,93
Japan	0,76	South Korea	0,88	Ireland	0,98	Germany	1,01	Spain	0,90	Luxembourg	0,90	Hungary	0,93
Greece	0,73	France	0,86	Portugal	0,97	France	1,01	Japan	0,83	Hungary	0,88	Portugal	0,88
Hungary	0,72	Ireland	0,76	Czech Republic	0,94	Spain	0,98	Portugal	0,76	Portugal	0,86	Czech Republic	0,85
Portugal	0,71	Japan	0,71	Greece	0,85	Ireland	0,94	Czech Republic	0,75	Czech Republic	0,84	Japan	0,80
Czech Republic	0,68	Turkey	0,71	South Korea	0,74	Luxembourg	0,87	South Korea	0,73	Greece	0,81	Poland	0,78
Poland	0,66	Germany	0,62	Poland	0,73	Slovakia	0,80	Greece	0,70	Japan	0,81	Greece	0,76
South Korea	0,66	Czech Republic	0,55	Japan	0,70	Greece	0,79	Luxembourg	0,69	Slovakia	0,78	Luxembourg	0,75
Mexico	0,65	Poland	0,45	Mexico	0,69	Japan	0,77	Poland	0,65	Poland	0,76	South Korea	0,68
Luxembourg	0,57	Portugal	0,35	Hungary	0,65	Mexico	0,64	Mexico	0,63	South Korea	0,67	Slovakia	0,67
Turkey	0,49	Slovakia	0,30	Turkey	0,62	South Korea	0,61	Slovakia	0,54	Mexico	0,66	Mexico	0,65
Slovakia	0,47	Luxembourg	0,06	Luxembourg	0,53	Turkey	0,41	Turkey	0,49	Turkey	0,49	Turkey	0,48
OECD	1,00	OECD	1,00	OECD	1,00	OECD	1,00	OECD	1,00	OECD	1,00	OECD	1,00

Figure 10. International cooperation of Icelandic scientists in articles published in foreign peer-reviewed magazines in 2002 to 2007.





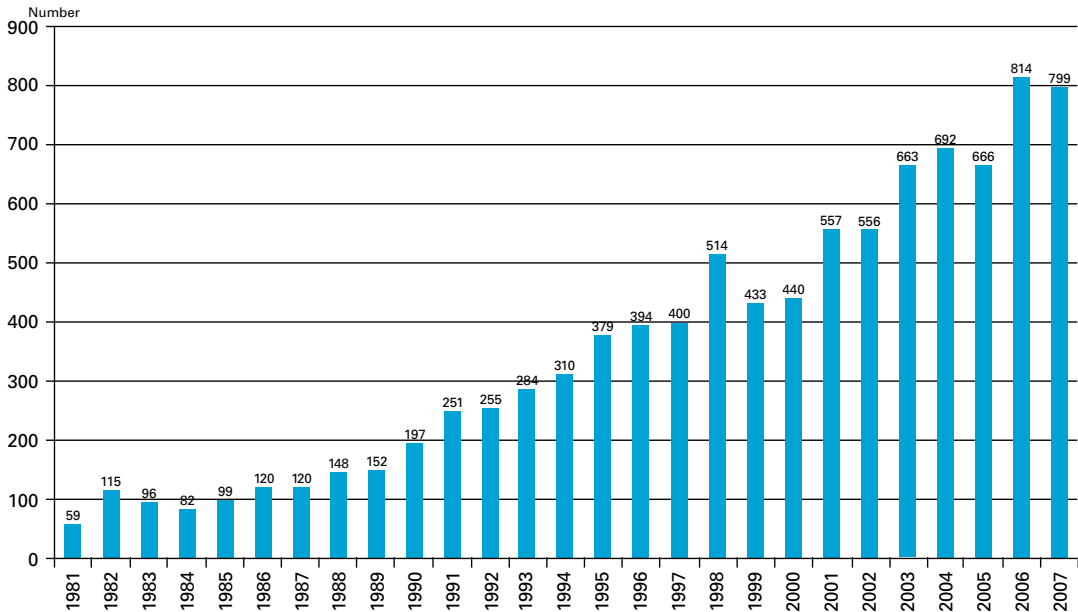
Source: Thomson ISI

Table 7. Overview of Icelandic participation in the EU's 6th Framework Programme for 2002-2006.

	Applications	Icelandic partners	Projects funded	Success %	EU contribution to project €	EU contribution to Iceland €
Thematic Areas						
1. Life sciences-biotechnology for health	24	28	8	33%	45.784.133	8.483.029
2. Information society technologies	58	97	10	17%	57.343.426	892.608
3. Nanotechnologies and nanoscience	19	26	1	5%	697.337	23.377
4. Aeronautics and space	1	1	–	0%	–	–
5. Food quality and safety	16	19	7	44%	78.069.239	3.182.032
6.1 Energy	34	60	14	41%	130.717.342	3.503.177
6.2 Transportation	–	–	–	–	–	–
6.3 Global change	30	40	12	40%	126.068.992	2.732.462
7. Citizens and governance in a knowledge-based society	13	12	1	8%	–	102.484
8.1.a NEST	–	–	–	–	–	–
8.1.b SSP	14	18	5	36%	9.710.662	736.312

8.2.a CRAFT	21	38	4	19%	5.434.065	228.514
8.2.b Collective	6	6	–	0%	–	–
8.3 INCO	–	–	–	0%	–	–
ERA-NET	14	14	10	71%	23.021.198	907.202
Structuring the ERA						
Research and innovation	14	15	7	50%	9.757.499	1.371.722
Research infrastructure	5	5	1	20%	16.892.052	200.016
Science and society	8	10	1	13%	–	12.000
Mobility - Marie Curie Actions	31	32	13	42%	9.949.604	1.558.798
Total	308	421	94	31%	513.445.549	23.933.733

Figure 11. Number of articles by scientists working in Iceland published in foreign journals (Thomson ISI) from 1981 to 2007.



Source: Thomson ISI

Table 8. Overview of Icelandic participation in the EU's 7th Framework Programme for 2007-2008.

	applications	Icelandic partners	Projects funded	Success (%)	EU contribution to project (€)	EU contribution to Iceland (€)
1. Health	33	42	11	33%	97.693.369	5.745.896
2. Food, agriculture, fisheries and biotech	27	32	4	15%	11.721.535	787.719
3. ICT	29	39	3	10%	18.429.536	834.104
4. NMP	9	9	–	22%	6.000.000	–
5. Energy	7	8	3	43%	299.856	66.002
6. Environment	29	32	7	24%	57.250.143	1.584.017
7. Transport	8	8	2	40%	4.152.728	148.210
8. Socio-economic and humanities	14	19	3	21%	6.292.883	626.947
9. Space	1	1	1	100%	–	51.960
10. Security	5	7	1	20%	3.495.612	–
11. Ideas	12	12	1	8%	3.491.171	3.491.171
12. People	38	40	12	32%	2.783.551	1.367.169
13. Infrastructure	5	6	4	80%	16.576.382	144.680
14. SME	21	31	5	24%	5.413.990	210.639
15. Regions of knowledge	3	6	–	–	–	–
16. Research potential	–	–	–	–	–	–
17. Science in society	10	11	2	20%	2.375.026	18.618
18. Support for research policies	2	2	2	100%	1.998.788	209.987
19. International cooperation	–	–	–	–	–	–
Total	253	305	61	24%	237.974.570	15.287.119

Table 9. Number of patent applications to the European Patent Office (EPO) by one million inhabitants and number of high-tech patents from 1995 to 2006.

	1995		1997		1999		2001		2003		2005		2006	
	Patents	High tech	Patents	High tech	Patents	High tech	Patents	High tech	Patents	High tech	Patents	High tech	Patents	High tech
Switzerland	241	23	303	36	348	53	384	64	370	41	394	51	405	24
Germany	160	19	213	31	256	43	264	47	263	38	271	38	275	20
Sweden	173	37	230	59	248	72	235	58	219	50	238	61	243	8
Finland	140	48	199	88	274	140	265	128	240	107	230	113	226	13
Luxembourg	80	–	125	12	147	7	166	18	196	9	207	15	228	21
Netherlands	114	28	153	42	187	61	241	98	212	42	186	48	178	9
Denmark	95	19	117	26	160	42	168	42	189	43	183	39	186	5
Japan	100	30	122	40	147	47	155	49	165	53	156	48	–	–
Belgium	80	16	113	20	130	29	116	25	126	24	129	30	130	17
France	87	15	104	21	120	30	119	30	126	29	124	28	125	14
EU-27	65	10	85	15	101	22	105	24	106	19	106	20	107	8
USA	83	26	97	32	111	40	105	36	107	34	105	32	–	–

Iceland	42	6	60	15	129	76	73	24	115	45	95	17	84	7
Norway	55	6	70	11	83	13	79	16	75	14	95	15	99	2
UK	66	15	78	19	98	29	94	28	90	22	81	20	78	5
Italy	44	4	55	6	65	6	70	7	75	8	79	9	81	4
Canada	28	8	41	13	52	17	54	19	56	20	66	29	–	–
Ireland	28	5	36	8	62	17	63	21	55	13	59	13	60	4
Spain	10	1	15	2	18	3	21	4	22	3	29	4	30	2

Figure 12. Number of patents in USA by 100 thousand capita owned by Nordic countries in 2003 to 2007.

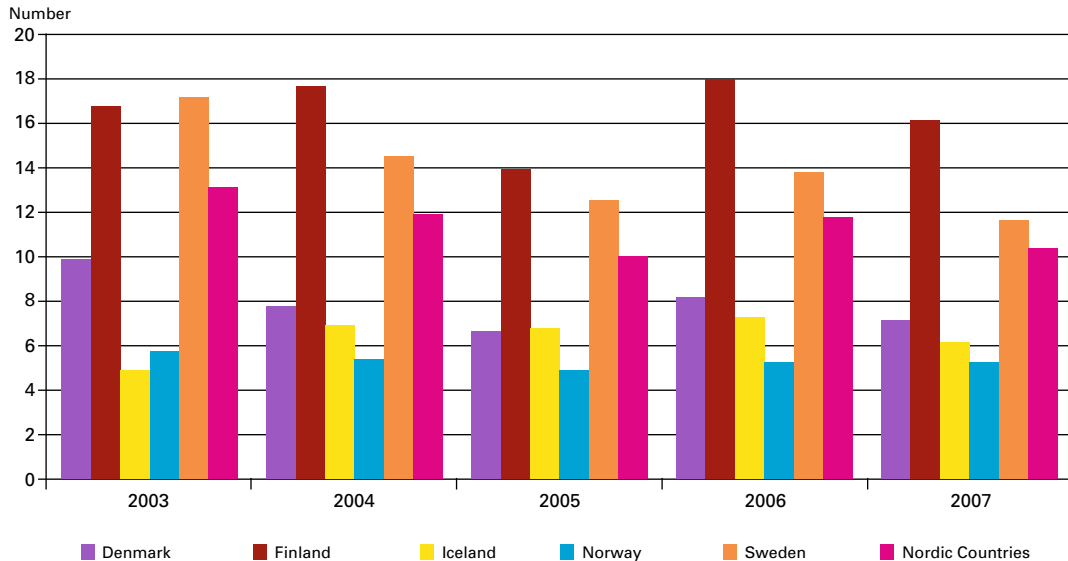


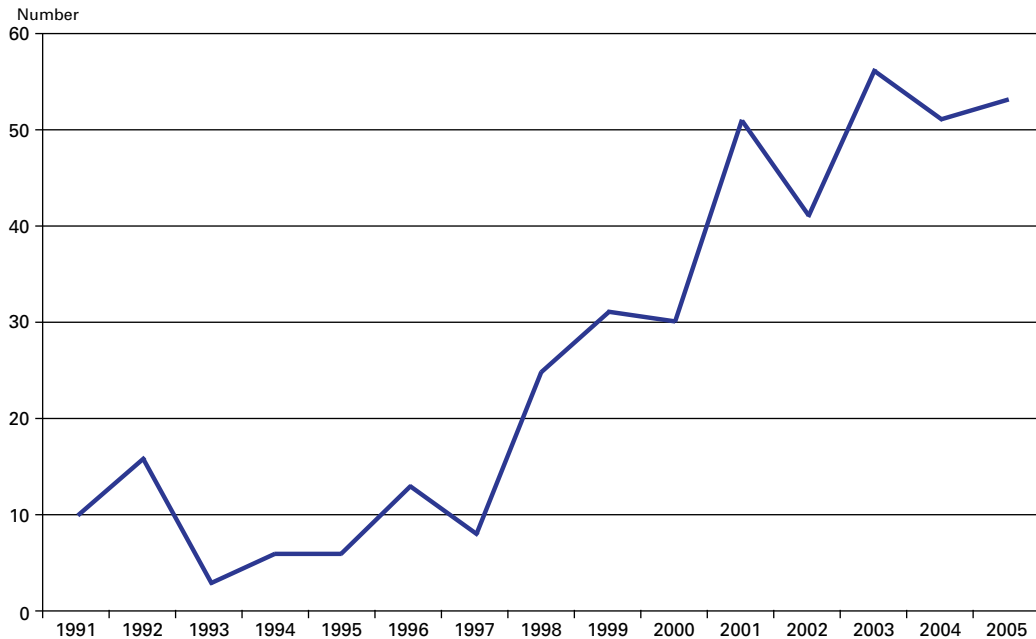
Table 10. Patent applications in Iceland by country of origin from 1995 to 2007.

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Samtals
USA	3	7	4	5	4	–	4	2	12	16	26	27	37	147
Sweden	1	7	12	5	3	7	15	11	14	10	17	12	12	126
France	1	5	4	5	–	–	1	1	5	6	15	4	15	62
Iceland	–	4	2	4	6	2	5	2	2	5	11	6	11	60
Norway	1	5	5	4	4	2	6	9	5	4	1	8	4	58
Germany	–	6	3	4	4	–	1	5	5	4	2	12	10	56
UK	–	7	–	2	1	–	1	2	10	1	3	5	18	50
Denmark	1	2	3	1	1	–	2	5	2	1	6	10	10	44
Switzerland	–	4	2	2	3	1	–	1	5	2	5	3	4	32
Canada	–	1	–	–	–	–	1	1	–	4	4	4	3	18
Italy	1	2	–	1	–	–	1	–	4	–	1	3	3	16
Netherlands	–	3	–	1	–	–	–	–	1	5	1	2	2	15
Japan	1	4	1	–	–	3	1	–	1	–	1	2	–	14
Ireland	–	–	–	–	–	–	–	1	6	3	1	1	–	12
Spain	–	–	2	–	1	–	2	–	–	–	3	2	1	11
Other countries	2	1	3	1	0	1	2	2	8	8	4	11	8	51
Total	11	58	41	35	27	16	42	42	80	69	101	112	138	772

Table 11. Share of patent applications by technology intensity from 2003 to 2005.

	High-tech	Medium high-tech	Medium-low and low tech
Finland	58,8	29,5	11,7
Ireland	55,8	30,6	13,6
Netherlands	54,7	31,4	13,9
USA	54,2	31,6	14,2
Canada	51,3	34,0	14,7
Iceland	51,1	34,8	14,0
Total World	49,6	35,4	15,0
UK	49,0	35,0	16,0
Japan	48,8	36,6	14,6
Sweden	47,9	37,3	14,7
Denmark	47,7	35,4	16,9
France	45,6	38,5	15,9
EU-27	44,1	39,9	16,0
Malta	42,4	44,0	13,6
Germany	39,4	45,2	15,4
Spain	39,2	40,4	20,4
Norway	35,8	43,7	20,5
Luxembourg	30,1	47,0	22,9

Figure 13. Number of Icelandic patent applications to the European Patent Office (EPO) from 1991 to 2005.



Source: EPO

Tabel 12. Expenditures for education by a few OECD and EU countries, as a share of GDP in 1996 to 2006.

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Denmark	8,08	7,92	8,30	8,09	8,28	8,44	8,44	8,33	8,43	8,28	–
Iceland	5,43	5,53	5,89	5,94	5,93	6,24	6,79	7,70	7,48	7,61	7,55
Norway	6,98	7,59	7,60	7,14	6,81	7,18	7,58	7,54	7,47	7,02	6,54
Sweden	7,36	7,60	7,69	7,39	7,31	7,12	7,43	7,30	7,18	6,97	6,85
Finland	6,99	6,51	6,26	6,24	6,08	6,04	6,21	6,41	6,42	6,31	6,14
Belgium	–	–	–	–	–	6,00	6,11	6,05	5,99	5,95	6,00
Switzerland	–	–	–	–	–	5,42	5,75	6,00	5,91	5,71	5,50
France	6,01	6,03	5,95	5,93	6,03	5,59	5,57	5,88	5,79	5,65	5,58
UK	5,10	4,97	4,77	4,57	4,64	4,65	5,20	5,34	5,25	5,45	5,50
Netherlands	5,03	4,78	4,82	4,76	4,86	4,78	4,90	5,12	5,16	5,19	5,46
EU-27	–	–	–	–	4,68	4,94	5,06	5,14	5,06	5,04	5,05
Germany	–	4,55	–	4,50	4,45	4,49	4,70	4,70	4,59	4,53	4,41
Italy	4,78	4,46	4,65	4,70	4,47	4,86	4,62	4,74	4,58	4,43	4,75
Spain	4,62	4,48	4,42	4,38	4,28	4,23	4,25	4,28	4,25	4,23	4,28

Table 13. Number of graduates from science fields at universities (mathematics, science and technology) by one thousand inhabitants, aged 20–29 in a few OECD countries and larger economies. From 1998 to 2007.

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Ireland	22,90	23,80	24,20	22,90	20,50	24,20	23,10	24,50	21,40	18,70
France	18,50	19,00	19,60	20,10	–	22,00	–	22,50	20,70	20,50
Finland	15,90	17,80	16,00	17,20	17,40	17,40	17,90	18,10	17,90	18,80
Switzerland	–	–	–	–	15,10	14,10	14,60	16,10	16,80	17,90
Sweden	7,90	9,70	11,60	12,40	13,30	13,90	15,90	14,40	15,10	13,60
Japan	12,30	12,60	12,60	12,80	13,00	13,20	13,40	13,70	14,40	14,40
Denmark	8,10	8,20	11,70	12,20	11,70	12,50	13,80	14,70	13,80	16,40
EU-27	8,80	9,20	10,10	10,70	11,30	12,30	12,50	13,20	13,00	–
Italy	5,10	5,50	5,70	6,20	7,40	9,10	10,80	12,40	13,00	8,20
Spain	8,00	9,50	9,90	11,20	11,90	12,60	12,50	11,80	11,50	11,20
Iceland	7,00	6,30	8,40	9,10	9,20	9,50	10,80	10,10	11,30	10,20
Germany	8,80	8,60	8,20	8,00	8,10	8,40	9,00	9,70	10,70	11,40
Belgium	–	–	9,70	10,10	10,50	11,00	11,20	10,90	10,60	14,00
USA	9,20	9,30	9,70	9,90	10,00	10,90	10,20	10,60	10,30	10,10
Norway	7,50	7,20	7,90	8,60	7,70	9,30	9,00	9,00	9,30	9,30
Netherlands	6,00	5,80	5,80	6,10	6,60	7,30	7,90	8,60	9,00	8,90

Source: Eurostat

Table 14. Doctorate degree students in the Nordic countries from 1993 to 2007.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Denmark	4.092	4.465	4.473	4.670	4.677	4.725	4.851	4.951	4.927	4.815	4.924	5.431	5.659	6.054	6.801
Finland	3.835	4.305	5.396	6.500	7.229	8.179	9.335	10.807	13.492	14.520	16.215	16.891	17.727	18.032	21.557
Iceland	–	–	7	9	14	21	35	52	69	80	114	144	174	231	221
Norway	3.500	3.575	3.600	3.700	4.224	4.427	4.608	5.160	5.095	4.124	4.476	5.033	6.034	6.478	7.091
Sweden	15.383	15.494	15.523	16.618	17.689	18.941	18.859	18.669	18.964	19.439	20.106	19.920	19.179	17.987	17.251
Total Nordic	26.810	27.839	28.999	31.497	33.833	36.293	37.688	39.639	42.547	42.978	45.835	47.419	48.773	48.782	52.921

Table 15. Number of doctoral degrees in the Nordic countries from 1990 to 2007.
(Icelanders abroad accounted for).

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Denmark	411	536	598	717	765	796	826	958	947	990	1.008	1.024	1.026	1.073	960	1.103	975	1.072
Finland	490	523	524	648	701	758	851	934	988	1.164	1.156	1.206	1.223	1.257	1.399	1.422	1.409	1.526
Iceland	28	–	43	43	–	46	39	38	33	27	47	41	65	72	66	69	58	48
Norway	393	415	439	491	551	602	602	625	685	695	647	677	739	723	782	855	905	1.030
Sweden	1.095	1.180	1.279	1.251	1.504	1.520	1.682	1.801	1.929	2.148	2.177	2.413	2.477	2.701	2.763	2.757	2.767	2.807
Total Nordic	2.390	2.654	2.843	3.111	3.521	3.679	3.962	4.322	4.552	5.000	4.993	5.324	5.471	5.763	5.914	6.151	6.071	6.444

Table 16. Share of Nordic inhabitants aged 25-64 with higher education and individuals participating in lifelong learning in 2003 and 2007.

	Share of inhabitants with higher education in %		Share of inhabitants taking part in lifelong learning	
	2003	2007	2003	2007
Denmark	32,9	32,2	27,6	29,2
Finland	24,2	36,4	24,6	23,4
Iceland	29,2	29,5	31,7	27,9
Norway	32,3	34,4	19,1	18,0
Sweden	28,2	31,3	35,8	32,0
EU-27	21,9	–	10,7	–